

BP0309US-CP1

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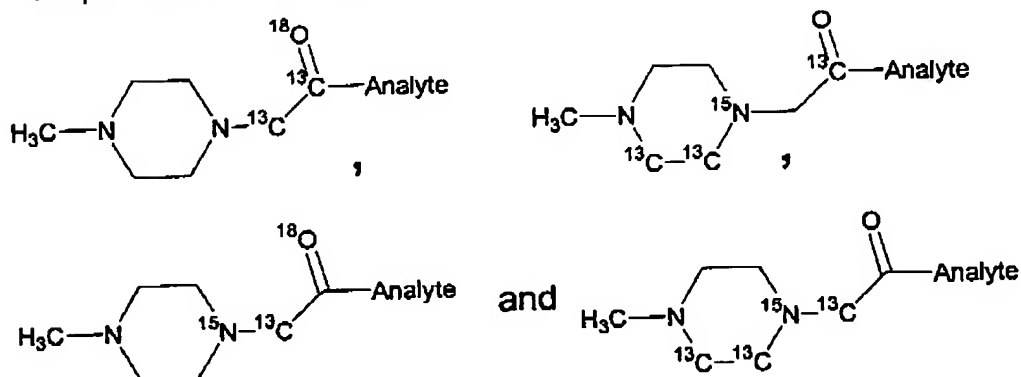
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2. In the Claims

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Claims 1-20 (Canceled)

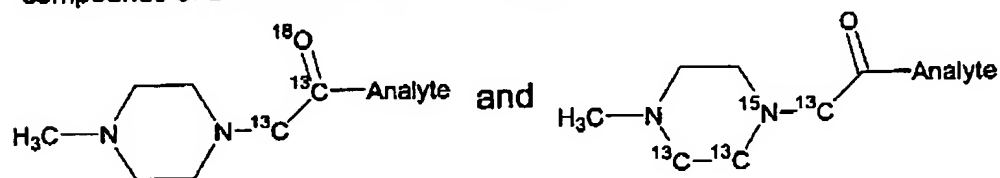
21. (New) A mixture comprising fragment ions existing in a mass spectrometer and derived by fragmentation of at least two differentially labeled molecules of an analyte wherein at least two of the differentially labeled analyte molecules are compounds of a formula selected from the group consisting of:



22. (New) The mixture of claim 21, wherein the analyte is a peptide.
23. (New) The mixture of claim 21, wherein the analyte is a protein.
24. (New) The mixture of claim 21, wherein the analyte is a nucleic acid.
25. (New) The mixture of claim 21, wherein the analyte is a carbohydrate, lipid or steroid.
26. (New) The mixture of claim 21, wherein the analyte is a small molecule with a molecular weight of less than 1500 daltons.

BP0309US-CP1

27. (New) The mixture of claim 21, wherein the molecular formula of at least one of the fragment ions is an ion selected from the group consisting of: $^{13}\text{CC}_5\text{H}_{13}\text{N}_2^+$, $^{13}\text{CC}_5\text{H}_{13}^{15}\text{NN}^+$, $^{13}\text{C}_2\text{C}_4\text{H}_{13}^{15}\text{NN}^+$ and $^{13}\text{C}_3\text{C}_3\text{H}_{13}^{15}\text{NN}^+$.
28. (New) The mixture of claim 21, wherein the mass spectrometer is a tandem mass spectrometer.
29. (New) The mixture of claim 21, wherein the mixture of fragment ions is generated by subjecting ions, of a select m/z value, of the differentially labeled analyte molecules to dissociative energy levels.
30. (New) The mixture of claim 21, wherein the differentially labeled analyte molecules are generated by labeling different samples, each sample comprising one or more analytes, with a different isobaric label of a set of isobaric labels such that the analytes of a sample are labeled with the same isobaric label but are differentially labeled as compared to the labeled analytes of a different sample.
31. (New) A mixture comprising fragment ions existing in a mass spectrometer and derived by fragmentation of at least two differentially labeled molecules of an analyte wherein at least two of the differentially labeled analyte molecules are compounds of a formula selected from the group consisting of:



wherein the fragment ions are either positively or negatively charged.